

CS361 - Group 6 - HW2: Evaluating Requirements Assignment

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Prototype for Use Case 1:

User creates an account

Online Privacy Homepage

Sign up Login

Categories of Guides

Category 1

Category 2

Category 3

Category 4

Category 5

Category 6

Top-Ranked Services

Service 1

Service 1

Service 1

Create Account

Full Name:

Email:

Phone Number:

Tech Savvy:

Username:

Password:

Confirm Password:

Submit

XXXX Email

Verify Your Email Address at Online Privacy Website! XXXXXXXXXXXXXXXXXXXXXXXX

Verify


You have successfully created account at Online Privacy Website!

Prototype for Use Case 2:

Name: User wants to learn about a type of service

Login

Online Privacy Service Categories




Category 1 – meta description here...Go

Category 2 – meta description here...Go

Category 3 – meta description here...Go

Category 4 – meta description here...Go

Category 5 – meta description here...Go

Next 

Guides for _____ Service

Sort By:

Choose



Guide 1:

Meta description here....

.....



Guide 2:

Meta description here....

.....



Guide 3:

Meta description here....

.....



Next



Prototype for Use Case 3:

User rates a service and leaves a user review on the Online Privacy website

Go Back

Create Account

Account Login Page

Enter Username:

Enter Password:

Submit

Edit Profile

Logout

User Account Home Page

Bookmarks

Anonymous VPN	★★★★☆	Rate and Review
Adblock Express	★★★★☆	Rate and Review
Guide to Cookies	★★★★★	Rate and Review

Search Guides

Search Services

Add a Service

[My Account](#)

[Logout](#)

Anonymous VPN

Rating: ★★★★★

Rate: ★ ★ ★ ★ ★

Leave a Review:

User Reviews

Joe B. rated ★★★★★

[Insert opinion-based pros and cons of product, as well as anecdotes about personal use.]

[My Account](#)

[Logout](#)

Anonymous VPN

Rating: ★★★★★

Rate: ★★★★★

Leave a Review:

[Long-winded anecdotes about the value of this product and how much it has completely changed my internet usage experience, along with middling negative about the product that kept it from receiving a perfect rating.]

User Reviews

Joe B. rated ★★★★★

[Insert opinion-based pros and cons of product, as well as anecdotes about personal use.]

My Account

Logout

Anonymous VPN

Rating: ★★★★★

Your Review for this Service:

User rated: ★★★★★

[Long-winded anecdotes about the value of this product and how much it has completely changed my internet usage experience, along with middling negative about the product that kept it from receiving a perfect rating.]

Edit

Delete

User Reviews

Joe B. rated ★★★★★

[Insert opinion-based pros and cons of product, as well as anecdotes about personal use.]

Revised Requirements Definition

The objective of this project is that users are able to use the website and gain valuable insights into how they can protect their information. For potential users of the website, the information should be made available in a way that there is no need to consult additional outside resources on the same subjects.

The following is the detailed functional requirements in terms of the environment that need to be implemented when developing the system.

- Users can navigate the website logged in or as a visitor.
- Upon navigating to the main page, the page consists of:
 - Website main title
 - Buttons to Sign Up or Login
 - A few links to different categories of guides
 - A few links to the top ranked services
- Users can login or signup by using buttons on the top right corner of the page.
- Clicking on the Sign Up button takes users to a page to create an account.
- To create an account, a user must input:
 - Full Name
 - Email
 - Phone Number
 - Tech Savvy-ness
 - Username
 - Password
- After submitting the details for an account, the inputted address will receive a verification email.
 - The email will have a link to confirm verification of the account.
 - Clicking and going to the link will bring up a new page that confirms the account has been verified.
- Upon successful completion of the account, a new page will confirm that the account is created and ready to be used.
- If a visitor has an account but has not yet logged in, he can click “Login” on the top right of the home page to login to an existing account.
- Clicking on “Login” will bring him to a new page to input his username and password to login.
 - The page will also have a back button to go back to the homepage.
 - The page will also have a button to bring user to new account registration page.
- Once logged in, the top of all pages will have buttons to the Account Profile page and to Logout
 - Clicking on the Account Profile page will lead users to their Account Home Page

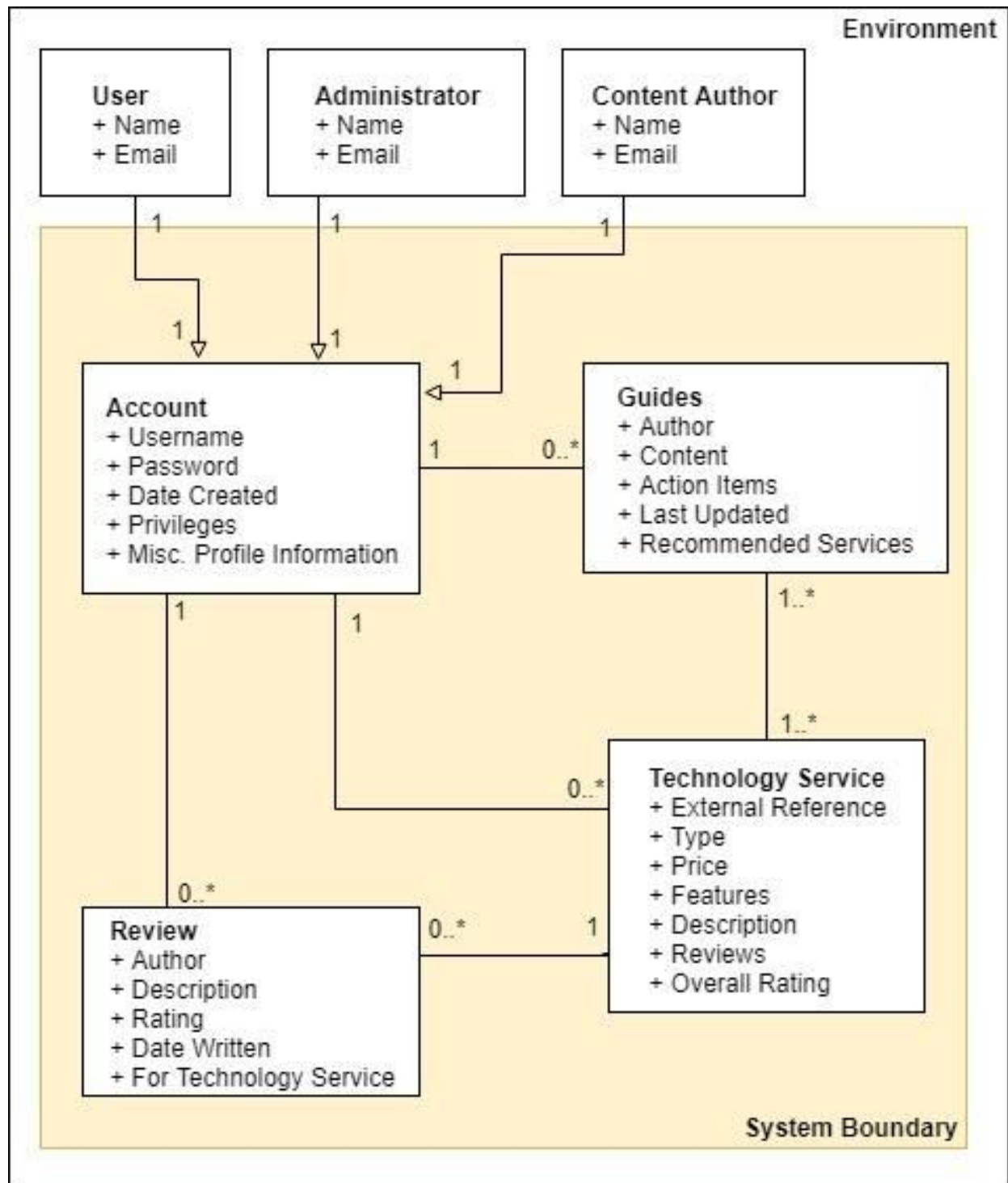
- Click on Logout will log users out, reverting back to the “Login” and “Sign Up” buttons.
- Users can view the bookmarks of guides and edit their profile from the User Account Homepage:
 - “Edit Profile” button replaces the “My Account” button.
 - There will be a list of bookmarked Guides and Services the user has bookmarked, each with a button for user to click in order to “Rate and Review.”
 - Search Guides button to search for guides.
 - Search Services button to search for services.
 - Add Service in order to add a new service.
- Users can subscribe to the website newsletter using their email address
- All users can view the guides that showcase technologies that can help keep their data safe.
- Users can view different categories of guides on the homepage with clear and good-looking icons.
- Clicking on a category icon will bring user to a list of guides for a particular category service(s).
- Users will see the title of the guide, a short meta description, and rating.
- Users can sort the guides by add date and view count.
- Logged in users can add the guides to the bookmarks of their account.
- For a specific guide, users can read through the information there and get enough context to be able to take action. The guide will have:
 - Title
 - Author
 - Date written
 - Main information
 - Links to individual services that provide technologies for the guide topic
- Users can view top-ranked services on the homepage
- For a specific technology, users can see the top ranked services.
- As a visitor, users can view individual services that provides those technologies by clicking on links that go to a page for that particular service.
- If users log in, they can also add, rate and review services.
 - This can be done by clicking on the “Rate and Review Service” button next to services when logged in
- Users can also go to a page to see all categories of services called “Online Privacy Service Categories”
- After a certain amount of time, the ranking of services will be refreshed to match the current rate.

- Users can search for a specific service on the website, and the website will display relevant matches with rankings for each service.
- Users can filter the search results by relevance, add date and rating.
- For each of those services, users should be able to see feature lists, any relevant pricing information if they're not free, and statistics on how this service helps.
- Users can read reviews written by other users who are familiar with that service as a visitor or using an account.
- Users can easily read the website from both desktop and mobile phone.
- Administrators have extra buttons appropriately placed to remove reviews.
- Removing a review will lead to an extra confirmation page before the review is permanently removed from the site.
- Content author users can create and edit guides on the page using an appropriately placed button on their account page.

The following is the detailed non-functional requirements in terms of the environment that need to be implemented when developing the system.

- The website looks professional so that users can trust the information provided.
- User experience flow as one navigates the page should be intuitive. Users can easily find information they need.
- Content should be written in an approachable manner, as the site was intended for beginners.
- Page navigation (i.e. navigation bar, back / forward links, etc) should be easy to use.
- There should be no duplicate guides on the same technology or offering the same services.
 - Duplicates should be either merged, or updated within a single guide by content authors who actively view the content of the website.
- There should be no duplicate services being added and offered on the website.
 - Duplicate services should be actively be looked out for and removed or merged by administrators.
- Reviews should be clean and helpful, and administrators should be actively seeking to remove inappropriate reviews.

UML Class Diagram



Revised Requirements Specification

The following is the detailed functional requirements in terms of the system's interfaces that need to be implemented when developing the system.

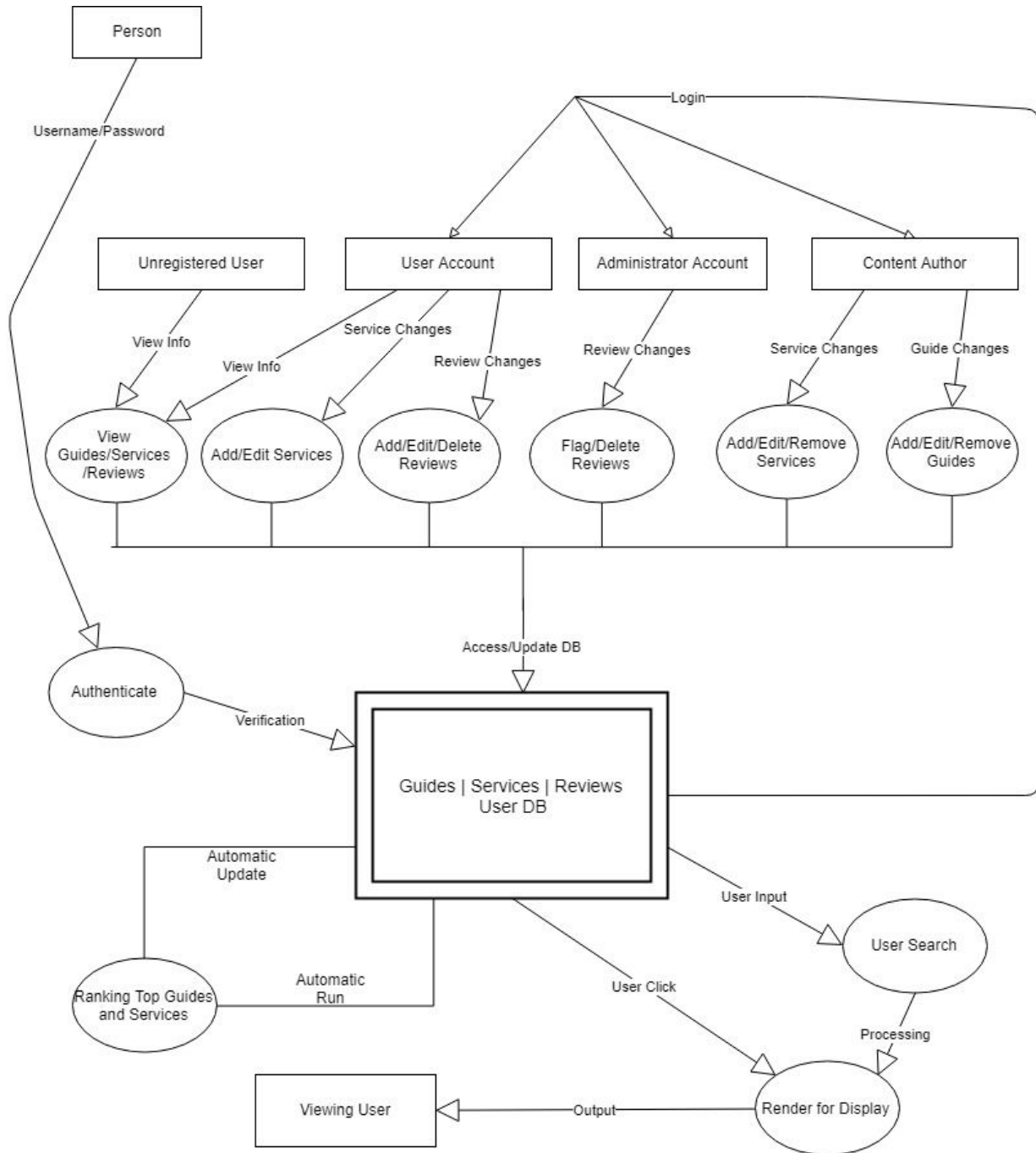
- Visitors are logged and tracked by IP address in order to calculate visiting and site statistics.
- Wrong URL get requests will be redirected to appropriate error pages.
- Error pages have link to direct user back to the homepage.
- The system will have an authentication process to validate a user's account and password before users log in.
- Authentication will happen by querying the database for a username and password match.
- Invalid username and/or password will stay on the same page, and warn the user via text that either the username or password is invalid.
- 5 consecutive invalid attempts will block the current IP address from submitting any login attempts for a certain duration.
 - After the duration is up as recorded by the system, and 5 consecutive invalid attempts are submitted again, the duration block out time will increase exponentially.
 - Successful login will reset the block out duration back to the base.
- Users are encouraged to email administrators for login issues after getting blocked out.
- Website will provide guides screens showing the guides for technologies that help protect privacy.
- All guide categories are generated based on aggregate categorization in the database and will be outputted on the homepage.
- Guides can be sorted by add date and view count on each category list.
- Website has a search bar on the guide and service lists for users to search for specific services or guides.
- The search results will rely on queries from the database, which essentially filters out guides and services that do not meet the filter criteria.
- Services can be sorted by relevance, add date and rating.
- Website will provide technology screens showing top ranked services.
 - Top ranked services will be a sort based on descending rating above a certain numerical threshold of reviews.
- Regular maintenance will be scheduled for a certain time.
 - Basic automation tests exist which will be run during maintenance times to ensure functionality of all get/post requests and links.
 - Errors should be reported in a backend log file for manual review.
- Website will provide service information screens showing the individual services that provides those technologies.
- Service information screen will provide add, edit, rate functions for users

- Administrator level authentication accounts can add, edit and remove services.
 - This authentication is checked at login based on database information.
- Content author level authentication accounts can add, edit and delete the guides.
 - This authentication is checked at login based on database information.
- Each service information screen displays feature lists, pricing information and statistics on how this service helps.
- Home screen shows the different categories of guides and top-ranked services
- System will send weekly newsletter to the users who subscribe to the newsletter
- For those who subscribed to the newsletter, the application will generate a button for them to have the ability to also unsubscribe from their profile page.
- Bookmarks of guides will be stored in a database
- The website is responsive and provides a mobile-optimized version.

The following is the detailed non-functional requirements in terms of the system's interfaces that need to be implemented when developing the system.

- The website should process users' request within 2 seconds.
- Top pieces of information for any given subject area should be presented according to how popular they are (i.e. number of reviews, total page visits, etc).
- Website experience works for mobile and web viewing.
- Website content should be displayed in the same order:
 - Categories should be listed in the same order.
 - Unfiltered lists of guides and services should be in the same order.
- Interactive elements work as expected.
- No errors on page load or using elements on the page given the URL is correct and new addresses are reached within site functionality (buttons, links, etc.)
- External links should not be leading to dead or outdated external services.
- Guides and services on site should have the same information matching external data.
- The system must be user-friendly and easy for new users to learn and use
- The website should be up 99.5% of the time
- The website should have capacity to handle simultaneous requests up to a certain reasonable capacity given visitor statistics.
- The website should be accessible to people with disabilities in accordance with the Americans with Disabilities Act of 1990.

Data Flow Diagram



Use Cases

Use Case #1:

Name: User creates an account after navigating to the website for the first time.

Actor: User

Preconditions:

- User has internet or cell phone connectivity
- User has an email address to verify their account

Postconditions:

- User has an account through which they can rate and view services

Flow of Events:

1. User navigates to the website home page.
2. User selects a Create Account redirect at the top of the web page.
3. A webform with input fields opens. The text description for the required information in appears on a line above each form. the fields are:

- Text: Full Name

Field: a text input field

- Text: Email

Field: a text input field

- Text: Phone Number

Field: a text input field

- Text: Technical Savvy

Field: a dropdown with the options: “Technical Expert”, “Above Average” “Some Technical Savvy”, and “What’s ‘Technical’ mean?”. The dropdown is set on a blank input until the user clicks on the arrow to select the option.

- Text: Username

Field: a text input field

- Text: Password

Field: a text input field

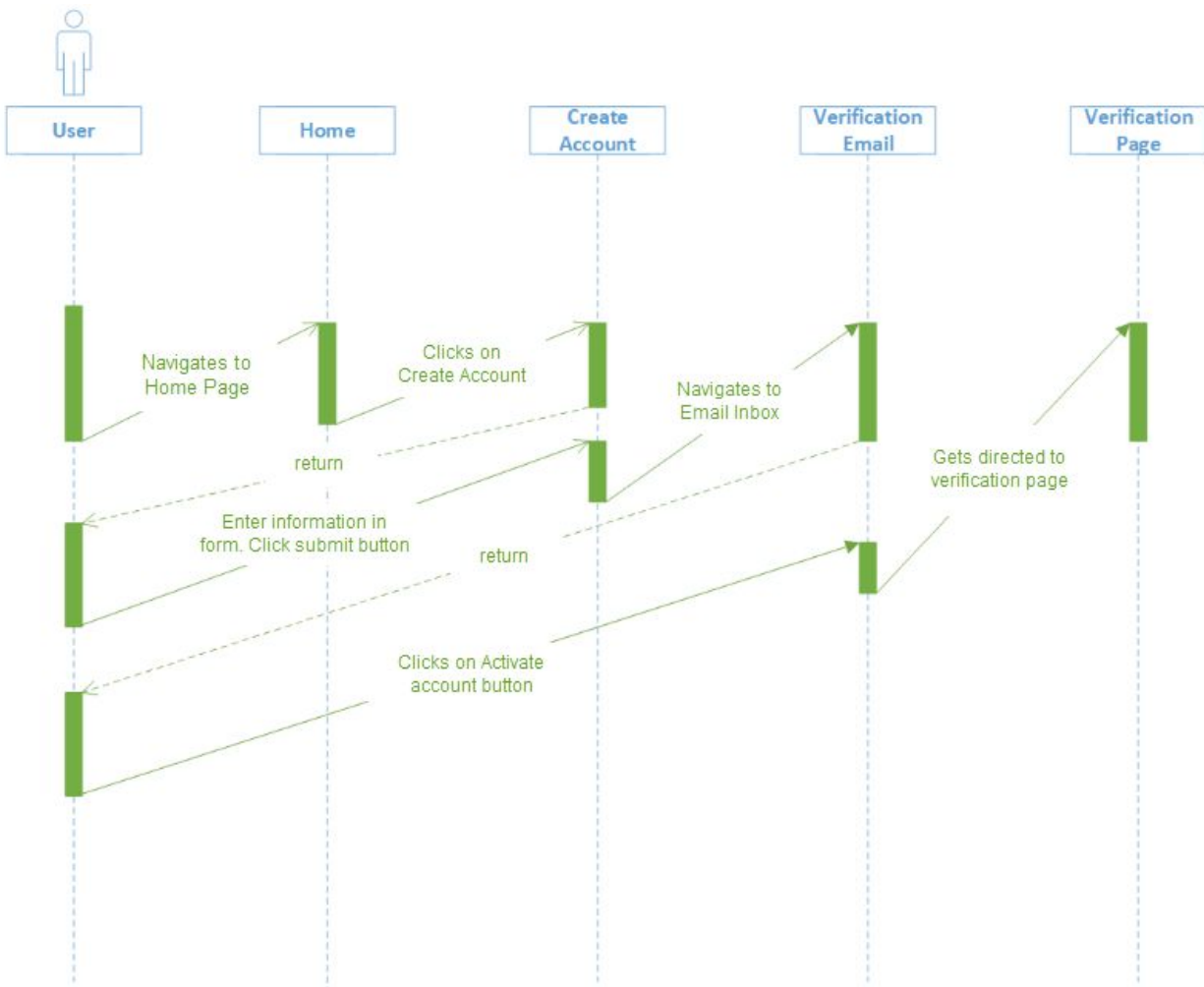
- Text: Confirm Password

Field: a text input field

4. The user fills out each field. The following conditions apply when filling out the Fields:
 - The Username must be unique. Otherwise, they will not be able to proceed.
 - The email must be a valid email address. It must have text, followed by @, followed by text, followed by a period, which is then followed by com, net, edu, org, or gov.
 - The password must match in both password input fields (case sensitive). Otherwise, the user will not be able to proceed.
 - No input fields can be blank. Otherwise, the user will not be able to proceed.
5. The user clicks a Submit button at the bottom of the form.

6. The user goes to the email inbox of the email address that they used on the form.
7. The user will see an email from our website.
8. The user opens the email.
9. The user sees text that reads: “Thank you for creating an account with Privacy for the Average Citizen. Please verify your account by following the link below”, as well as a button, below the text, that says “verify my account.”
10. The user clicks on the button.
11. The user is redirected to a webpage that says: “Your account has been verified! You can now access our content with your username and password at the login page.”

Message Sequence Diagram



Use Case #2:

Name: User wants to learn about a type of service

Actor: User

Preconditions:

- User has internet or cell phone connectivity

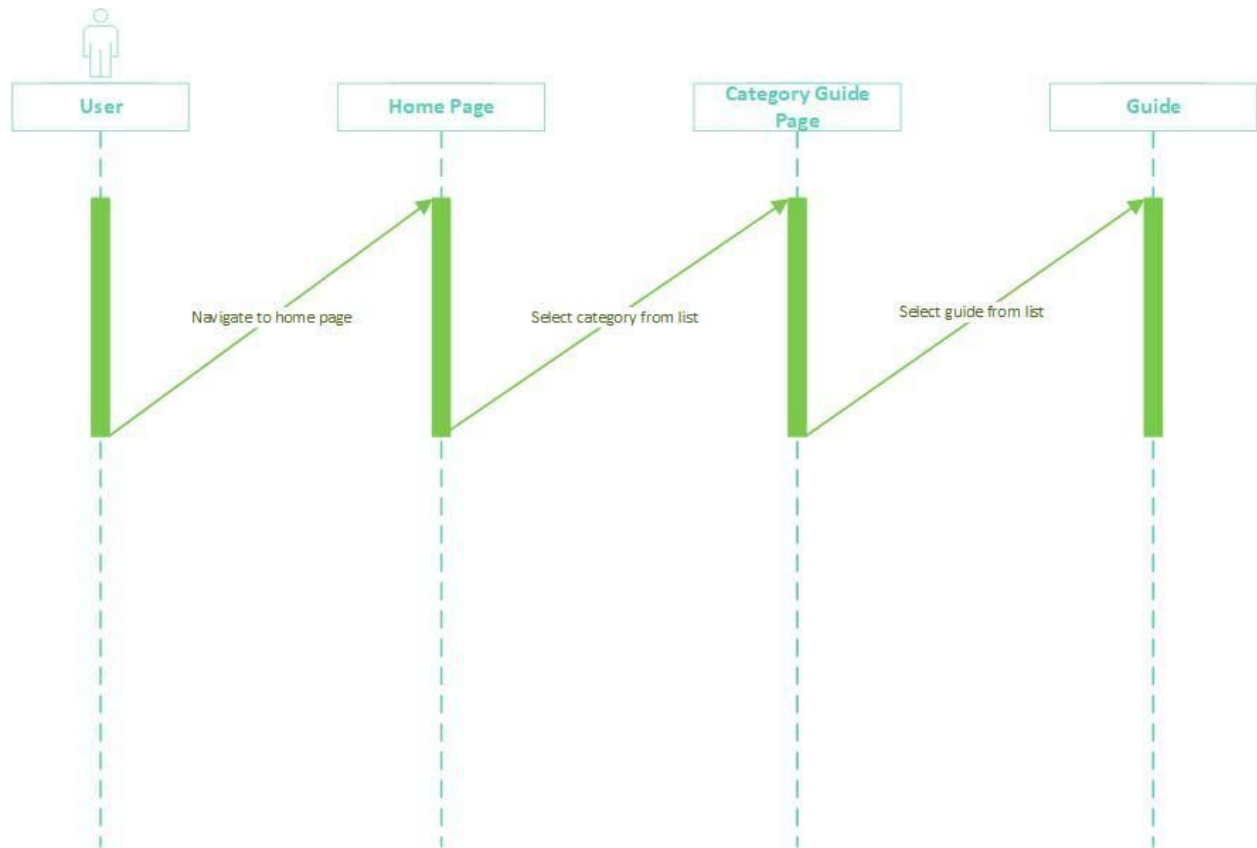
Postconditions:

- User successfully learns about a type of service
- One or more guides have another view

Flow of Events:

1. User navigates to the website home page
2. User sees the box of links to different categories of guides, such as VPNs, Ad/Script Blockers, etc.
3. User picks the desired guide category by clicking on the link and waiting for the page to load
4. This redirects to a new page with entries in that category, for example a page with entries about VPNs
5. User decides how to sort the entries, which can be by most popular or alphabetically
6. User clicks on the sorting method
7. User looks through the entries
8. User chooses which entry he/she wants and clicks on whichever entry they chose
9. This redirects to a new page with the guide that was chosen
10. User reads the guide and is informed on the category he/she chose

Message Sequence Diagram



Use Case #3:

Name: User rates a service and leaves a user review on the Online Privacy website

Actor: User

Preconditions:

- User has internet or cell phone connectivity
- User has created an account on the website already

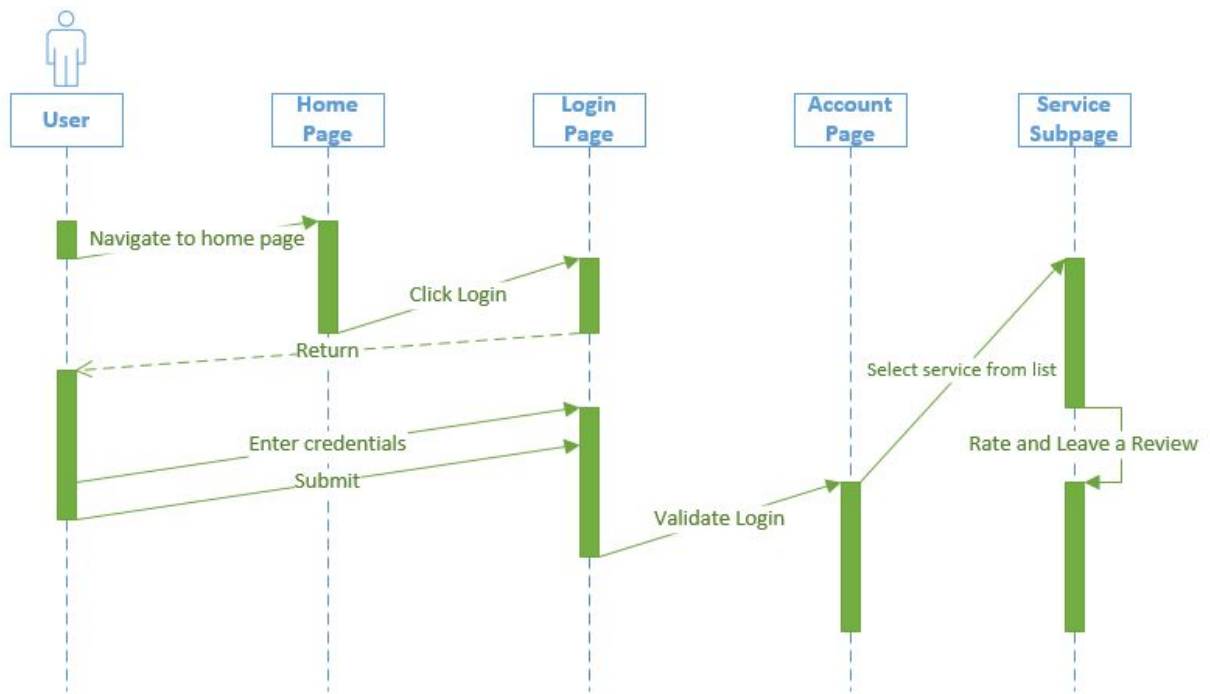
Postconditions:

- User successfully rates a service and leaves a review.

Flow of Events:

1. User navigates to the website home page.
2. User selects a Login redirect at the top right of the web page.
3. A text entry box opens.
4. User is prompted to enter unique username and password.
5. User enters username and password and clicks the Submit button to log in.
6. User is presented with a list of bookmarked services, sorted by type, saved after previous interactions with the website search function.
7. User clicks the “Rate and Review” redirect button next to a previously bookmarked VPN service.
8. User is taken to a form which allows them to click a 1 – 5 star rating for the product, and a text entry box that allows them to type their review.
9. User clicks on the fourth star from the left, which “fills” four stars and gives the service a 4/5 rating.
10. User types out their review of the service in the provided text box and clicks the Submit button to finish.
11. The user review is posted on the specific page for the service, marked with their account name as the reviewer.

Message Sequence Diagram



Summary of Changes to Definition and Specification

Changes to Functional Requirements:

The first change is originally users don't need to create an account to navigate the website. They can read the guides and services as a visitor. However, if users want to bookmark the guides or review and rate the services, they need to log in to access those functions. The reason for this change is that we misunderstood the clients' requirements in assuming that all users must have an account in order to access any content on the website.

The second change is the homepage should display the different categories of guides and top-ranked services so that users can easily find the information they want from homepage. The original requirement description is "Users can see and interact with content both from guides and service information on the homepage". The reason for this change is original requirement description is too vague.

The third change is users can sort the guides by add date or view counts. After this change, users can easily read the latest guides or the guides most users care about.

The fourth change is after users search the services, they can sort the results by relevance, add date and rating. This sorting can help user more easily find the services they want.

The fifth change is adding an account management page for users. In account page, users can easily manage their information.

The sixth change is users can bookmark the guides and access the bookmarks from their account page. The reason for this change is users might want to save some guides for future reference. We want to encourage the users to come back to the website and to have a sense of ownership of their account instead of using the browser's ability to bookmark different pages. Additionally, it encourages them to rate the guides they bookmark if they are visiting their bookmarks consistently through the account profile home page.

The seventh change is users can subscribe to a newsletter from the website by filling out their email address. The reason for this change is some users might want to receive latest guides about how to protect their privacy online. Subscribing the newsletter is a convenient way for them to receive latest information.

Eighth, visitor tracking functionality is now mentioned. This is an addition because it is important for us to track this information in order to better understand how to scale and manage the capacity of the servers the website is running on in order to prevent crashing or slow loading, or waste of money when the website can be hosted fine on cheaper plans. This would also help with future issues such as investigating security and business expansion.

Ninth, how wrong URL is addressed. This is important to create a better user experience to let them know if a wrong URL was entered, and give them the opportunity to go back to the website.

Tenth, details on dealing with inappropriate authentication are added. This is an important security addition, as it prevents potential bots running scripts on the website and malicious hackers from entering unlimited login attempts.

Eleventh, content author and administrator duties have been clarified and detailed. The customer mentions that administrators should not be guide writers, and that change has been rectified.

Twelfth, some functionality with regards to automated testing during server and website maintenance is added. As the website scales and grows larger, it becomes necessary to ensure that no regression occurs.

Numerous additions have also been added to the existing requirements to provide better detail, these include but are not limited to:

- Detailed description of what the main page has to offer to visitors in terms of content.
- What buttons do and how they help the users navigate.
- Details on account creation, including the need to verify through a valid email.
- The difference between logging in and creating an account.
- Description of the account profile page.

All of these details are mentioned and added to the requirement definitions because we have been able to work with the customer to get a better sense and understanding of how exactly the website should function. Through this communication, we have been able to better understand how to construct the website in such a way that is easy to use and flows. Thus, we are able to write more concrete and detailed definitions, and improve on our previous well-intentioned, but vague details.

Changes to Non-Functional Requirements:

Some information are added to better describe how inappropriate content are dealt with on the website to increase user experience. This includes what should be done about duplicate guides and services, as well as inappropriate reviews. It also showcases some responsibilities of the administrators and content authors of the website.

Reconciliation of content and functionality between mobile viewing and desktop viewing has been added. Previously it was just mentioned that mobile viewing should be a seamless experience, but it should be clear that the content and arrangement and functionality of pages, links, redirects, etc. should all be the same. This aspect was made clearer based on customer's intention that the viewing should be looking at exactly the same set of data from the same database.

Server capacity considerations have been added as a necessity in order to serve customers to our best. This data allows us to better address the needs that requests should process within 2 seconds and that the server should be up 99.5%.

Changes to Data Flow Diagram

Remove User DB and integrated all account data to main DB. This change was made because having a second DB was unnecessary, as all account information can be stored with the addition of a few tables on the main DB.

Brief Summary of This Week

- Customer was able to meet and discuss the definition, specification, and paper prototypes through email and gchat on Thursday, allowing us to refine and update what we previously have.
- Team member contribution:
 - Updated Definitions/Specifications + Summary of Changes
 - Sheng Bian, Linge (David) Ge
 - Paper Prototypes and Use Case Updates
 - Connor Shields, Michael Waldrop